

This Listing of Claims will replace all prior versions, and listings, of claims in this application:

**Listing of Claims:**

1. (Amended) An isolated polynucleotide molecule comprising:
  - (a) a nucleic acid molecule encoding an aspartate kinase (ask) polypeptide;
  - (b) a nucleic acid molecule encoding an aspartate-semialdehyde dehydrogenase (asd) polypeptide; and
  - (c) a nucleic acid molecule encoding a dihydrodipicolinate reductase (~~dapB~~) polypeptide.
2. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated diaminopimelate dehydrogenase (ddh) polypeptide, wherein said truncated ddh polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a ddh polypeptide.
3. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding a complete or truncated ORF2 polypeptide, wherein said complete ORF2 polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 9, and wherein said truncated ORF2 polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of an ORF2 polypeptide.

4. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule additionally comprises a nucleic acid encoding complete or truncated ddh, complete or truncated ORF2 and complete or truncated diaminopimelate decarboxylase (lysA) polypeptides, wherein said truncated ddh polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a ddh polypeptide, wherein said truncated ORF2 polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of an ORF2 polypeptide, wherein said complete ORF2 polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 9, and wherein said truncated diaminopimelate decarboxylase polypeptide has a length, measured in total number of amino acids, of at least 25% of the full length of a diaminopimelate decarboxylase polypeptide.

5. (Original) The polynucleotide molecule of claim 4, wherein said polynucleotide molecule additionally comprises a P1 promoter element of SEQ ID NO: 15.

6. (Amended) The polynucleotide molecule of claim 5, wherein said P1 promoter element is adjacent to said nucleic acid encoding lysA diaminopimelate decarboxylase.

7. (Amended) The polynucleotide molecule of claim 1, wherein said ask, asd and ~~dapB~~ dihydrodipicolinate reductase polypeptides are encoded by genes native to a cell of the genus Corynebacterium, *Brevibacterium flavum* or *Brevibacterium lactovermentum*.

8. (Amended) The polynucleotide molecule of claim 1, wherein said ask and asd polypeptides are encoded by ~~the ask-asd operon of ATCC21529~~ an operon comprising a nucleotide sequence at least 95% identical to SEQ ID NO: 1 and a nucleotide sequence at least 95% identical to SEQ ID NO: 3.

9. (Amended) The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by a gene native to cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~
10. (Amended) The polynucleotide molecule of claim 3, wherein said complete or truncated ORF2 polypeptide is encoded by a gene native to a cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~
11. (Amended) The polynucleotide molecule of claim 4, wherein said diaminopimelate decarboxylase lysA polypeptide is encoded by a gene native to a cell of the genus Corynebacterium, ~~Brevibacterium flavum or Brevibacterium lactovermentum.~~
12. (Amended) The polynucleotide molecule of claim 1, wherein said dihydrodipicolinate reductase dapB polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 5 ~~the coding region of the dapB gene of NRRL B11474.~~
13. (Amended) The polynucleotide molecule of claim 2, wherein said ddh polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 7 ~~the coding region of the ddh gene of NRRL B11474.~~
14. (Cancelled).
15. (Amended) The polynucleotide molecule of claim 4, wherein said diaminopimelate decarboxylase lysA polypeptide is encoded by a nucleotide sequence at least 95% identical to SEQ ID NO: 11 ~~the coding region of the lysA gene of ASO19.~~
16. (Original) A vector comprising the isolated polynucleotide molecule of claim 1.
17. (Original) A host cell comprising said vector of claim 16.
18. (Original) The host cell of claim 17, wherein said cell is a prokaryotic cell.
19. (Original) The host cell of claim 17, wherein the cell is a eukaryotic cell.

20. (Original) The host cell of claim 17, wherein said host cell is a *Brevibacterium flavum*, *Brevibacterium lactofermentum* or *Corynebacterium glutamicum* cell.
21. (Original) The host cell of claim 17, wherein said host cell is an *Escherichia coli* cell.
22. (Original) A method for transforming a host cell comprising:
- (a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is stably integrated into said host cell's chromosome; and
  - (b) selecting a transformed host cell.
23. (Original) A method for transforming a host cell comprising:
- (a) transforming a host cell with the polynucleotide molecule of claim 1, wherein said isolated polynucleotide molecule is maintained in said host cell as extrachromosomal DNA; and
  - (b) selecting a transformed host cell.
24. (Withdrawn) A method of producing lysine comprising culturing said host cells of claim 17 in a culture medium, wherein said host cells produce lysine into said culture medium.
25. (Amended) The polynucleotide molecule of claim 1, wherein said polynucleotide molecule does not comprise a nucleic acid molecule encoding any one of dihydrodipicolinate synthase (~~dapA~~), tetrahydrodipicolinate succinylase (~~dapD~~), N-succinylaminoketopimelate transaminase (~~dapC~~), N-succinyl-diaminopimelate desuccinylase (~~dapE~~) or diaminopimelate epimerase (~~dapF~~) polypeptides.

26. (New) The polynucleotide molecule of claim 7, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

27. (New) The polynucleotide molecule of claim 9, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

28. (New) The polynucleotide molecule of claim 10, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.

29. (New) The polynucleotide molecule of claim 11, wherein said bacterium is selected from the group consisting of *Corynebacterium glutamicum*, *Brevibacterium lactofermentum*, and *Brevibacterium flavum*.